

## **Preventable Neonatal Mortality in India: A Verbal Autopsy**

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High neonatal mortality is an important deterrent in achieving millennium development goals (MDGs) of low child mortality by 2015 in most developing countries. In India, though the recently concluded National Family Health Survey-3 (NFHS-3) (2005-6) has reported a marginal decline in overall neonatal and infant mortality rates, it continues to remain high to achieve the specific MDG with in stipulated time frame. One of the contributing factors is variation in mortality levels and its correlates across the geographical spread of the country.

This paper discusses the correlates of neonatal mortality in Uttar Pradesh the most populous but relatively less developed state of Indian union. As per NFHS-3, it also has one of the highest NMR rate in the country. The paper focus on assessing the socio-economic and cultural behaviours and practices and, program factors which directly and indirectly influences the neonatal mortality outcomes.

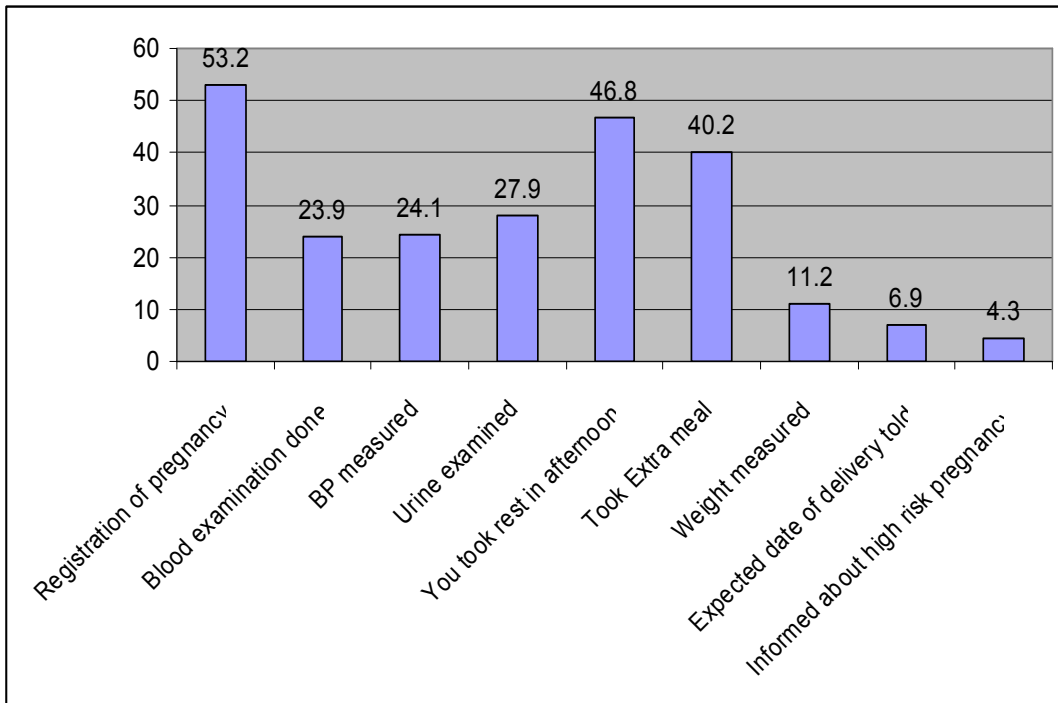
The analysis is based on verbal autopsies (with mothers of diseased children) of 348 neonatal mortality cases occurring among 14,655 children born during the year 2007 in 700 villages from 7 districts. The findings are supplemented by data from a quantitative survey of 14,655 women who have born a child during the reference period of the study.

Ten percent of these children have died with 30 minutes of birth. Another 20 percent deaths have occurred with 12 hours of birth. Of total, 60 percent of neonatal deaths have occurred within first week of life.

The study groups major correlates of neonatal mortality in the following broad categories.

- *Those related to inadequate antenatal care.* Only 54 percent women received any antenatal care (ANC) form a frontline health worker or other qualified providers.

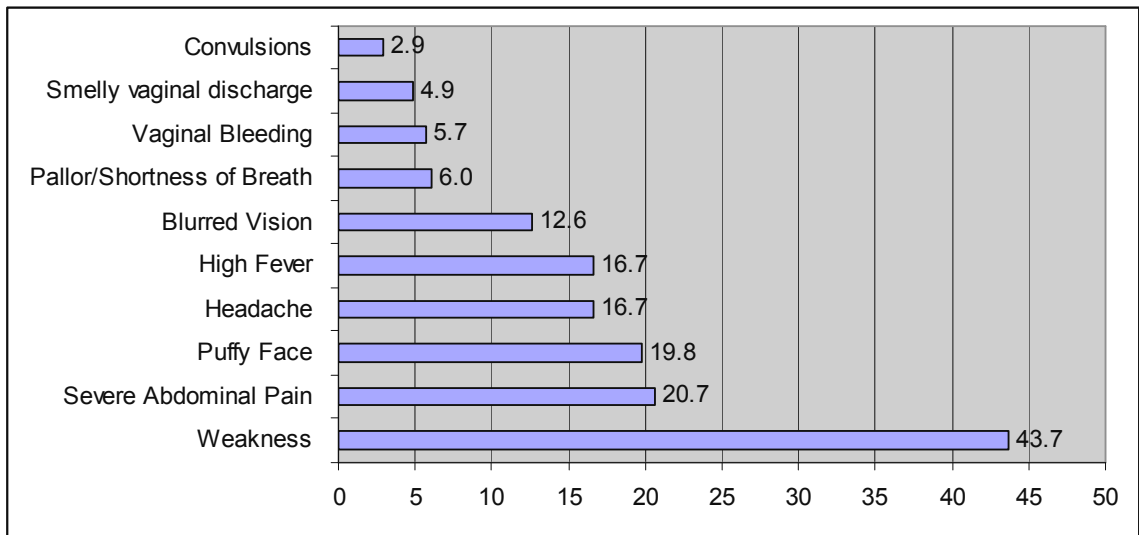
**Graph: ANC care received during the reference pregnancy**



The quality of antenatal care was poor and in most cases all the components of care were not provided. Lack of access to quality services and poor appreciation of the need of ANC were some of the other factors associated with this.

- *Those related to low awareness for danger signs of pregnancy and poor management of high risk pregnancies. Over two third women scored low on composite index of awareness for danger signs of pregnancy.*

**Graph: Health problems in last three months of pregnancy**



Only one third of these women have taken any treatment for these problems. *Around 18 to 20 percent of neonate deaths could be attributed to these behaviours and reasons.*

- *Those related to low awareness for danger signs during labour and delivery and their poor management.* Over 60 percent women scored low on composite index of awareness for danger signs of labour.

Nearly two thirds deliveries were held at homes largely by friends and relatives. Of the women taken to hospital for delivery, over 70 percent were shifted due to labour complications. Also, in two thirds of these cases decision to shift to hospital was taken quite late (after 5-6 hours of onset of labour pains).

*Between 18 to 20 percent of neonatal deaths could be attributed these factor.*

- *Those related to poor management of neonate's danger signs and sicknesses including access to treatment.* Though only 50 percent women scored low on composite index of awareness for danger signs for neonates, care management was poor.

**Table: Health problems experienced by child immediately after birth**

Type of Health Problem	Percentage
<b>N</b>	<b>348</b>
Difficulty breathing	30.7
Chest in drawing	23.6
Fast breathing	23.3
Unresponsive or unconscious	22.7
Grunting	21.0
Cold to the touch	13.8
Fever	10.3
Abdominal distension	9.2
flaring of the nostrils	8.3
Diarrhea	8.3
Stiff and arched backward	8.3
Yellow palms or soles	7.8
Vomiting	7.5
Discharge from the umbilical cord stump	4.3
Cough	3.4
Bulging of the fontanel	2.3
Convulsion	2.0

In addition, 55 percent mothers reported that child did not breast feed at all. Around half of these children were taken to a health facility for treatment, but only after waiting for over 1 or 2 hours when the condition of child deteriorated. Nearly 40 percent children died before any medical assistance could be provided to them.

*Around 40 percent of neonatal deaths were attributable to these factors.*

- *Combination of two or more of above categories.*  
*Around 15 percent of neonatal deaths could be attributed to these factors.*
- *Congenital malformation and other such conditions.*  
*Around 5 percent of neonatal deaths could be attributed to these factors.*